



Progress Report Surfrider Foundation Rincón

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LONG-TERM GOALS

To continue weekly monitoring and testing of various recreational beach sites in northwestern PR for water quality (WQ) assessment by detection of levels of fecal bacteria contamination using quantified EPA-approved technology under our Blue Water Task Force (BWTF) program. To expand BWTF coverage to other sites, both beaches and recreational fresh water, as volunteer time and finances permit. To continue to acquire the most sensitive WQ parameter detection equipment to augment and assist in WQ assessment, and research capacity. To continue to explore additional internet or social media platforms for the dissemination of this data, and provide CariCOOS with a larger audience / user base, including installing physical infrastructure (signage) at BWTF sites to inform beach users of the WQ testing and direct them to the latest testing results of that site via posting of Surfrider Rincón and CariCOOS websites addresses.

MILESTONES / OBJECTIVES

Successful weekly sampling and testing of the 13 sites within the core BWTF Rincón program (Aguada and Rincón), and subsequent publication of that data, for 100% of scheduled sampling dates (n=17) until the queda was declared March 15. Last BWTF sampling date was March 11. Sampling and testing of the two Añasco sites (Parque Vacacional and Balneario Tres Hermanos) accomplished 75% of testing dates (n=13) during that period. Sampling and testing of the Rescate Playas Isabela / Ramey School satellite program sites accomplished 90% of available testing dates (n= 10, determined by Ramey School lab facilities being available during academic calendar and holidays) until the queda was declared.

The national Surfrider Foundation unveiled a new format for the national BWTF on March 11. Using input provided by the Rincón chapter, the new BWTF website is much more user friendly and provides a platform for much more data to be registered and thus increasing information available to the public. Unfortunately the archived data transfer was not completely successful, and an ongoing effort continues to review historical data to correct values and eliminate duplicated entries.

Once again, the national Surfrider Foundation Clean Water Report for calendar year 2019 reveals that the Rincón program provided the most WQ results of any single lab (n=907) for the national BWTF system, registering approximately 14% of the total results recorded.



The pilot project of installing physical signage at selected BWTF monitoring sites has been very successful, and input from the public has been very positive, and access to both Rincón BWTF data as well as CariCOOS website being more easily available to the public. Equally significant is the fact that of the 10 signs installed, only one has been stolen/removed, and none of the others have been vandalized or covered in stickers or spray paint. This is a clear, if indirect, indication of how valuable this information is to all segments of the general public, and respect given to both the BWTF and CariCOOS by local residents.

WORK COMPLETED

Despite the official closure of all Surfrider activities (including BWTF programs) by the national Surfrider Foundation HQ in response to the SARS Cov-2 pandemic, Tamar was permitted to conduct a daily sampling of the Ultimo Brinco BWTF monitoring site to determine the impact on freshwater WQ by conditions caused by the queda, using duplicate lab facilities located in his house. That study continues to date, and appears to be the only freshwater WQ testing done at any scale during the queda in PR.

Also, Tamar conducted completely unauthorized weekly sampling of beaches in the Special Study Area in Rincón, with the testing performed at his house, taking full personal responsibility for this action. Due to the unauthorized status of that sampling, publishing of that data is uncertain at this time, but it is available to interested CariCOOS partners on request. Again, this may be the only beach monitoring that has been done during the queda in PR.

MAJOR OUTCOMES

Aside from the extraordinary negative impact on WQ being documented by the Ultimo Brinco study (full report is being created at this time) no new capacities were developed. However, several needs for specialized equipment was underscored. In response to those needs the Rincón BWTF has:

Applied for a grant to acquire a desktop qPCR machine and associated equipment, in collaboration with a molecular biologist. This equipment would allow the chapter to detect SARS Cov-2 virus (or viral RNA remnants) in marine, freshwater, and sewage samples. It would also allow eDNA testing of environmental samples to identify the source species of any fecal bacteria found in samples, as well as cost-effectively create 'bacterial profiles' of selected freshwater sites as a potential tool for source tracking of bacteria found in marine samples.

RELATED PROJECTS

The chapter has also applied to the Aqualink foundation for two automated data buoys to be deployed within the Reserva Marina Tres Palmas, and the deeper waters immediately offshore of the RMTP. These buoys would be capable of measuring wave height and direction, as well as subsurface water temperatures, and automatically uplink that data to a global network hosted by Aqualink. This would greatly augment to data already being provided by the CariCOOS automated buoy in Rincón, as well as potentially allowing smaller scale modeling / better resolution of wave behavior in the area of the RMTP. If this pilot project proves successful, further buoys might be applied for, to be deployed in other marine areas of critical concern.



CHANGES/PROBLEMS

Due to the COV-19 pandemic and associated closures / restrictions, the Rincón BWTF has had delays or possible cancellation of 3 collaborative research projects for this report period.

- 1) Project title: “Enhancing Coastal Intelligence for the US Caribbean” PI: Prof. Pedro Resto UPRM. Status: IDEXX lab materials ordered for, and delivered to, Resto in Feb. No payment for those materials yet received by Surfrider, and the project status is unknown.
- 2) Project title: “Rapid On-Site Detection of Fecal Indicator Bacteria for Coastal Water Quality Monitoring” PI: Prof. David Arnold UFL. Status: approved for funding by PR Sea Grant, but status and timeline unknown.
- 3) Project description: Field trials of portable qPCR method for quasi- real time determination of fecal bacteria content of various types of water samples in PR. PI: Prof Ruth Randall U Cornell. Ongoing discussions of project, but timeline unknown.

WORK PLAN FOR UPCOMING PERFORMANCE PERIOD (June 1, 2020 – November 30, 2020)

To resume full core BWTF weekly testing as soon as possible given pandemic restrictions, with probable modification of the RPI/Ramey School satellite program, dependent on whatever changes are made to Ramey School operations. To add additional sites if possible.

To initiate the second phase of the beach WQ signage program, with updated website links, to also include freshwater monitoring sites, for all core BWTF sites.

If the application is accepted, to deploy the two Aqualink automated data buoys in the vicinity of the RMTP in collaboration with CariCOOS.

To continue to pursue the collaborative research proposals listed above, should this be possible.

REFERENCES

NEW BWTF WEBSITE: <https://bwtf.surfrider.org/report/4>

https://s3-us-west-2.amazonaws.com/publicfiles.surfrider.org/Clean_Water/Surfrider-Foundation-Clean-Water-Report-2019.pdf

<https://www.aqualink.org/>